General Mathematics | Units 3–4 | Outcome 1

Understand travelling and exploring problems and Eulerian or Hamiltonian traversal.

Key knowledge | Free preview

Learning target: Understand travelling and exploring problems and Eulerian or Hamiltonian traversal.

Eulerian traversal concerns using each edge once; Hamiltonian traversal concerns visiting each vertex once, with return to the start for a cycle. For a connected undirected graph, all degrees even permit an Eulerian circuit, while exactly two odd degrees permit an open Eulerian trail between those vertices. These degree tests do not settle Hamiltonian existence.

Try the mathematics

Task 1. A square A–B–C–D–A also has diagonal AC. List degrees, identify the endpoints of an open Eulerian trail, and give an actual trail using every edge once.

Continue with the full worksheet

The complete resource has 2 focused task sets and substantive worked solutions. Use an exercise book or print the A4 worksheet. This preview shows the first task without its full solution.

Find this resource:
https://resources.aspiretopowerlearning.com.au/vce/skills/aspire-internal-gm-u34-o1-aos2-networks-kk-02/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). General Mathematics; Units 3–4; Outcome 1; Key knowledge; Networks and decision mathematics; bullet 2; p. 92.

The learning target is a concise paraphrase. Aspire reference: aspire-internal-gm-u34-o1-aos2-networks-kk-02. This is an internal identifier, not an official VCAA code.

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